EXHIBIT "C"

Report of John J. Datovech, P.E., C.F.E.I.

in the matter of

Vermont Mutual Insurance Company,

a/s/o Robert and Nancy McNeil and

Robert and Nancy McNeil

v.

Hamilton Beach / Proctor-Silex, Inc.

C.A. NO. 04CV12257NG

In the United States District Court

District of Massachusetts

April 17, 2006

04/17/06

INTRODUCTION

As Manager, Product Assurance & Licensing Quality at Hamilton Beach/Proctor-Silex, Inc. ("Hamilton Beach"), I am familiar with the design, manufacture and testing of toasters at Hamilton Beach. A copy of my curriculum vitae is provided in Appendix A to this report. The subject toaster in this matter (the "McNeil toaster") is, in fact, a toaster that was designed, manufactured and sold by Hamilton Beach. The purpose of this report is to summarize my observations and opinions regarding the McNeil toaster. These opinions, which I hold with a reasonable degree of engineering certainty, are based upon the results of my scientific investigation and engineering analysis.

On January 14, 2004, I nondestructively examined the remains of the McNeil toaster and other artifacts that were preserved by the Plaintiff for examination in a conference room at the offices of Engineering and Fire Investigation ("EFI") at 634 State Street, Suite K, in Dartmouth, Massachusetts. My examination consisted of visual inspection, photography, and noninvasive measurements. The same evidence was later examined in a laboratory at the corporate headquarters of Hamilton Beach, on June 20, 2005. This second examination consisted of visual inspection, photography, radiography ("x-rays"), and noninvasive measurements.

In addition to examining the physical evidence listed above, I also reviewed and considered the following documents and items prior to issuing this report:

1) The "Massachusetts Fire Incident Report" for Incident 32193, dated October 11, 2001

2) A letter on Medford Police letterhead, signed by Jeffrey Lowe of EFI and Detective Paul Mackowski of the Medford Police Department, dated October 16, 2001

3) "Fire Investigation Report One and Final" by Jeffrey Lowe of EFI, dated November 8, 2001

4) "Fire Investigation Report One Supplemental" by Jeffrey Lowe of EFI, dated January 16, 2002

5) "Engineering Report One and Final" by Michael Rains of EFI, dated August 16, 2002

6) The transcript of the deposition of Nancy McNeil in the subject matter, dated September 26, 2005

7) The transcript of the deposition of Kevin McNeil in the subject matter, dated September 26, 2005

8) The transcript of the deposition of John Doyle in the subject matter, dated November 30, 2005

9) American National Standards Institute/Underwriters Laboratories ("ANSI/UL") Standard 1026: Electric Household Cooking and Food-Serving Appliances

10) The applicable portions of UL File E6132, Vols. 1, 20, Sec. 19

11) National Fire Protection Agency ("NFPA") 921: Guide for Fire and Explosion Investigations, 2001 and 2004 Editions

12) Babrauskas, Vytenis, "Temperatures in Flames and Fires," Fire Science Technology, Inc.

13) Shigley, Joseph Edward and Larry D. Mitchell, Mechanical Engineering Design, Fourth Edition, McGraw-Hill, Inc., 1993

14) My personal knowledge and experience from working as an engineer for Hamilton Beach.

BACKGROUND

A fire occurred at 50 Princeton Street in Medford, Massachusetts on Thursday, October 11, 2001. This fire has resulted in the subject litigation against Hamilton Beach. Michael Rains states in his "Engineering Report One and Final:"

- The first six coils of the ejection spring were damaged severely (stretched and distorted) and this greatly reduced the energy that could be stored in the spring.

- The coils were damaged because the spring was not centered in the hole that allowed it to pass through an opening on a metal portion of the movable ejection mechanism. It was rubbing against the edge of the metal mechanism. The metal edge got caught in between the spring coils when the spring was in the up position. Pushing down on the external slide lever just stretched the first six coils of the spring without stretching any of the remaining spring coils.

The result of the above failure scenario was that the Pop-Tart didn't eject and the toaster heater coils remained on. This allowed the temperature inside the toaster to rise to a level sufficient to ignite the Pop-Tart.

ASSIGNMENT

The purpose of this investigation is to evaluate whether the McNeil toaster is defective and to evaluate Michael Rain's theory of defect in the McNeil toaster.

COLLECTION OF DATA

Identification of the McNeil toaster

As previously mentioned, I initially examined the evidence on January 14, 2004. Thumbnail copies of photos taken during this examination are provided in Appendix B. A second examination of the toaster by Hamilton Beach was made on June 20, 2005. Thumbnail copies of photos and x-rays taken during this examination are provided in Appendix C. Based upon the construction of the toaster, I have determined that it was a Type T17, Model 22430, manufactured by Hamilton Beach between April 1997 and August 1998.

Data collected from my examination of the McNeil toaster

The subject toaster displays a pattern of high-temperature damage consistent with the product being in a fire. The thermoplastic housing is partially melted and burned. The lifter knob is fused into the re-solidified plastic housing in a down position, but it is not completely at the bottom of its travel. The color knob is partially melted and also is fused into the re-solidified plastic housing in a full-dark color setting (see Figure 1).

Figure 1: Color Control on Full Dark Setting (6 on a scale of 1 to 6)

There is a partially-charred towel fused into the melted housing. Insulation on the power cord has been consumed from the tips of the folded plug blades to approximately 8.5 to 9.5 inches from these blades. Ferrous components of the toaster, such as the top metal heat shield, the grill wires, the front and rear frames, the base, and others are oxidized. The solenoid winding insulation is soot covered and charred. The resistance between the terminals of the solenoid measured approximately 11.35 kΩ; a constant, stable reading could not be achieved.

The subject toaster also shows signs of being in use prior to the fire. The remains of a charred, swollen toaster pastry are in the right bread well (see Figure 2).

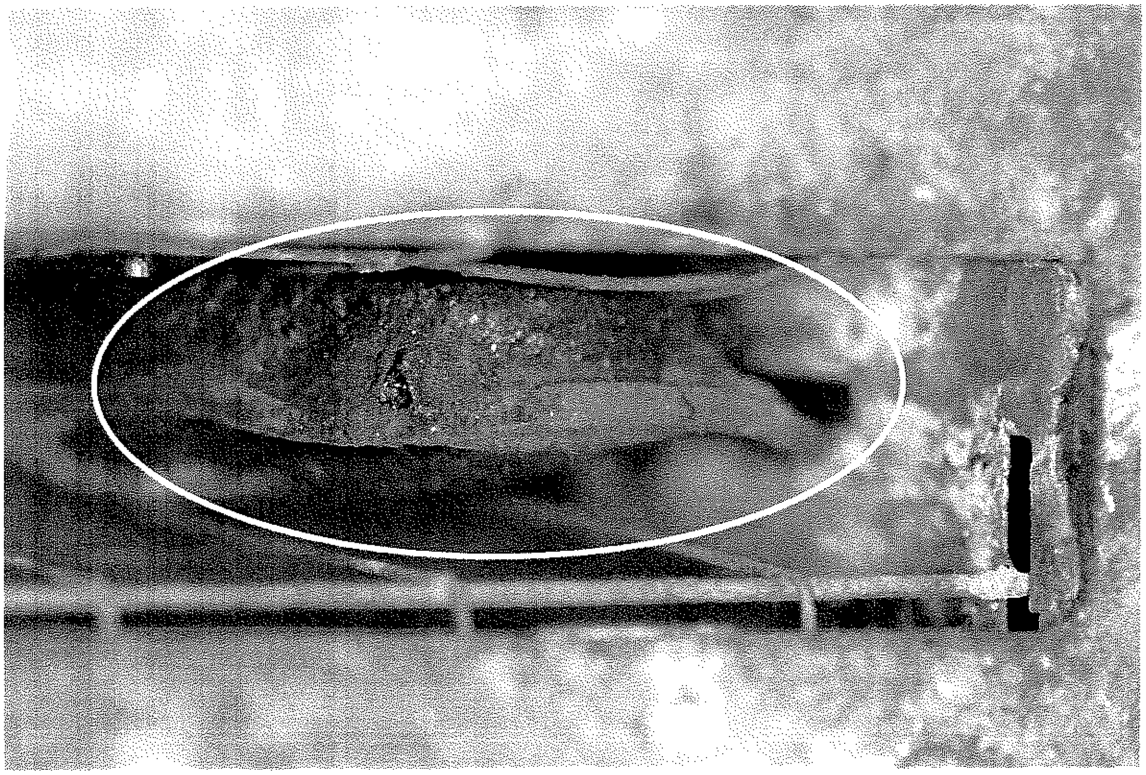


Figure 2: Remains of swollen and charred toaster pastry in right bread well

The swollen toaster pastry filled the gap between the grill wires (bread guides). The bimetal of the toaster is warped toward the rear of the toaster, and there is also charred debris on the bimetal of the toaster (see Figure 3).

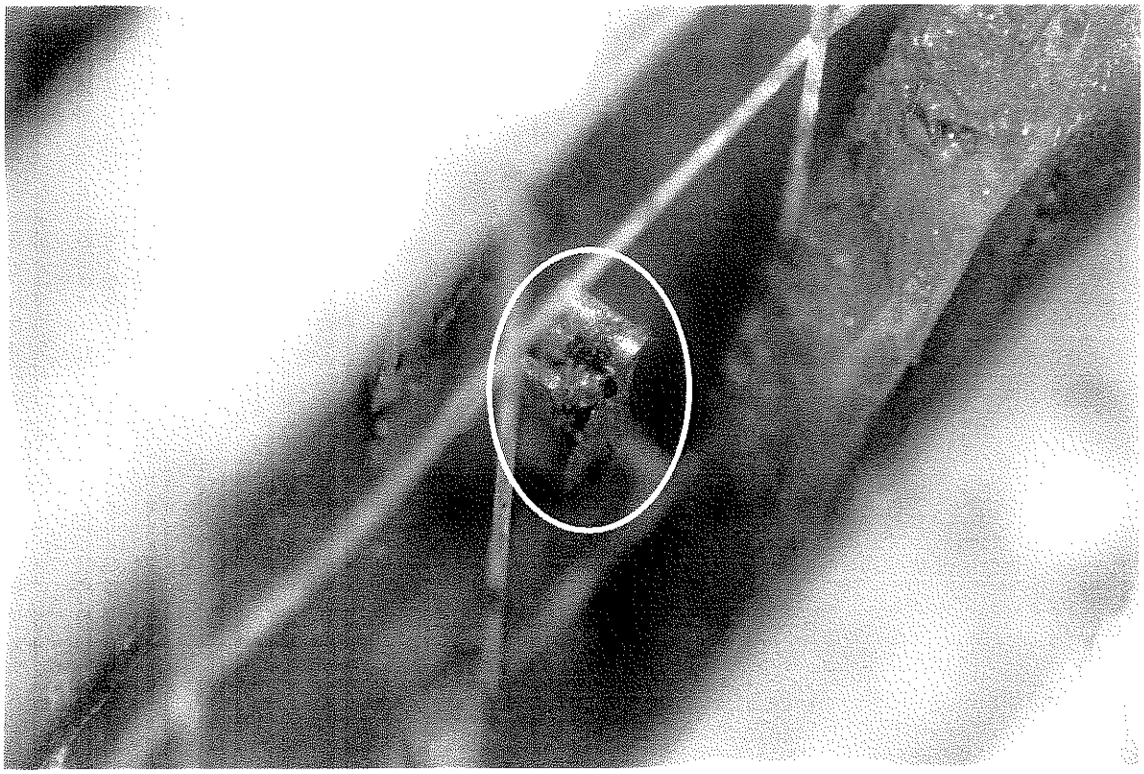


Figure 3: Bimetal of toaster covered with charred debris

The slide of the toaster is resting towards the bottom of its intended travel, but not all the way at the bottom, latched position. The lifter spring is permanently stretched at the top. The latch striker is resting above the angled top of the latch bar. The latch striker is not engaging the slot in the latch (see Figure 4). The moving contact blades of the line switch are not in contact with the fixed-position contact terminals. X-rays of the toaster indicate no signs of abnormal electrical activity.

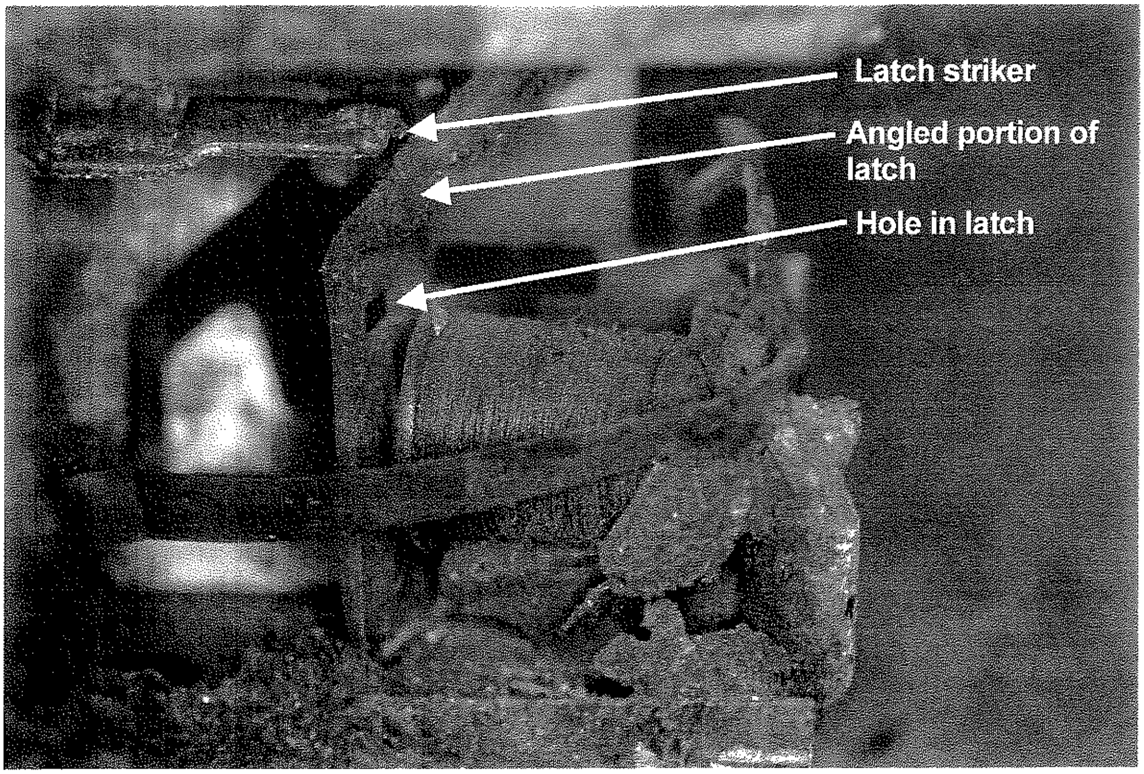


Figure 4: Latch striker resting above the hole in the latch

In addition to the towel, remains from other items that are not a part of the toaster also were found on or inside the toaster. There was a silver-colored, re-solidified metal on the right side of the line switch body. There was a spring in the bottom of the left bread well. There was also melted metal on the inside of the front area of the control compartment of the toaster near the color cam, and in a pile of debris in the bag containing the toaster. Also in the debris pile was a piece of glass, approximately 0.090 inches in thickness.

A separate, zip-closure, plastic bag was provided with the toaster. This bag contained the remains of a duplex wall receptacle. The receptacle was stamped with markings indicating it was manufactured by Leviton, and it appeared to be a back-fed unit. Only portions of the thermoset body were remaining. No plug blades were in any of the slots. The back box containing the receptacle was metal. The box was oxidized more on the exterior than the interior, and more toward the front than the rear. There was one three-conductor branch cable feeding the box. X-rays of the receptacle indicate no signs of abnormal electrical activity.

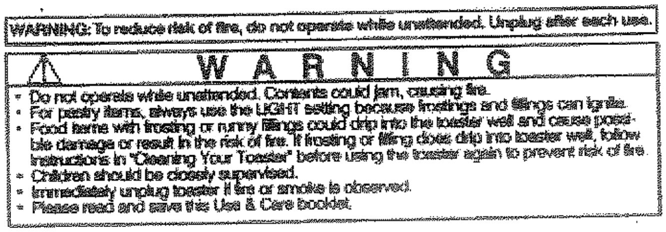
In addition to the receptacle, the plastic bag also contained fragments of two stranded, copper conductors attached to solid plug blades. The blades were clean (not soot covered) at the tips. The numbers "681" were stamped into the line-side blade. The diameter of each stranded conductor was approximately 0.045 inches. The line side conductor was approximately 17 inches from the tip of the plug blade to the fractured end of the conductor. The neutral side conductor was approximately 21.5 inches in length to the first major fracture. In actuality, this conductor was longer than measured but many strands were broken beyond the 21. 5 inch location. No beads were seen on any of the conductors. Other loose fragments of stranded conductors were in the plastic bag as well.

Data collected from the UL file

A review of UL File E6132, Vols. 1, 20, Sec. 19 indicates that UL independently determined the design and manufacturing of the Type T17 toaster complied with ANSI/UL 1026. This means that the design of the McNeil toaster successfully passed the full battery of the required third-party evaluations and tests required by this standard.

Data collected from the Use & Care and Drop-In Warning Sheet

As previously mentioned, the subject 22430 toaster was manufactured between April of 1997 and September of 1998. During this time, the toaster was supplied with a Use & Care Guide and a separate Drop-In Warning Sheet. The Use & Care Guide contained hazard communications with regard to the potential ignition of food items in the toaster (see Figure 5).



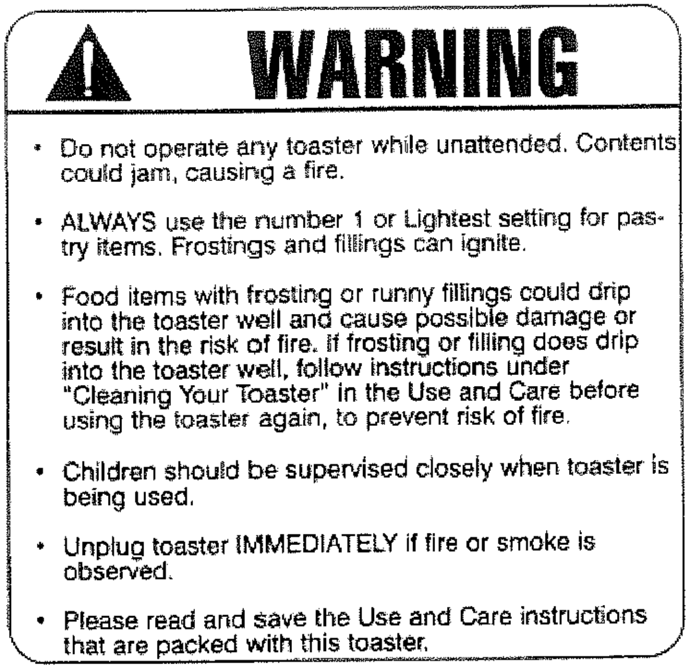
WARNING: To reduce risk of fire, do not operate while unattended. Unplug after each use.

WARNING

- Do not operate while unattended. Contents could jam, causing fire.
- For pastry items, always use the LIGHT setting because frostings and fillings can ignite.
- Food items with frosting or runny fillings could drip into the toaster well and cause possible damage or result in the risk of fire. If frosting or filling does drip into toaster well, follow instructions in "Cleaning Your Toaster" before using the toaster again to prevent risk of fire.
- Children should be closely supervised.
- Immediately unplug toaster if fire or smoke is observed.
- Please read and save this Use & Care booklet.

Figure 5: Hazard Communications from the Use & Care Guide

Similarly, on a separate, yellow, Drop-In Warning Sheet, there were hazard communications with regard to potential ignition of food items in the toaster (see Figure 6).



WARNING

- Do not operate any toaster while unattended. Contents could jam, causing a fire.
- ALWAYS use the number 1 or Lightest setting for pastry items. Frostings and fillings can ignite.
- Food items with frosting or runny fillings could drip into the toaster well and cause possible damage or result in the risk of fire. If frosting or filling does drip into the toaster well, follow instructions under "Cleaning Your Toaster" in the Use and Care before using the toaster again, to prevent risk of fire.
- Children should be supervised closely when toaster is being used.
- Unplug toaster IMMEDIATELY if fire or smoke is observed.
- Please read and save the Use and Care instructions that are packed with this toaster.

Figure 6: Hazard Communications from the Drop-In Warning Sheet

OPINIONS:

Based upon the foregoing scientific investigation and engineering analysis of the evidence related to the subject fire, I have formed the bases of the following opinions to a reasonable degree of engineering certainty:

1. The McNeil toaster was properly designed and manufactured. No defect existed in this toaster.

   a. My examination of the remains of the toaster revealed no evidence of a defect.

   b. The design and manufacturing of the McNeil toaster complied with the relevant standard for toaster design and manufacturing, ANSI/UL 1026

   c. The design and the manufacturing process of the McNeil toaster were validated by an independent, third-party agency, Underwriters Laboratories ("UL").

   d. The physical evidence indicates the toaster's release system was functioning properly at the time of the fire.

      i. The bimetal is warped toward the rear of the toaster. This means the bimetal was moving properly under the influence of heat.

      ii. After the fire, the toaster is not in the completely down and latched position. This shows that the latch release and the toaster carriage moved upward. This shows the solenoid was energized, which means the thermal control switch closed. Accordingly, the pusher rod moved to close the switch, which provides further evidence that the bimetal moved under the influence of heat.

2. Michael Rains' hypothesis that the lifter spring was damaged in such a way that the toaster could not pop up and de-energize at the end of the toater cycle is incorrect.

   a. Michael Rains' hypothesis of how the toaster failed is not supported by the physical evidence. After the fire, the toaster is not in the completely down and latched position; the toaster carriage moved upward, which required the spring to have been functional.

b. Michael Rains' hypothesis of how the toaster failed is not supported by theory or experimentation.

i. First, there is a fundamental theoretical error in Michael Rains' opinion. He speculates that the damage to the lifter spring is due to the spring catching on another piece of metal, which resulted in a reduction in the number of active coils to six. He further speculates that this will result in less energy stored in the spring, thereby preventing the spring from causing the toaster to pop up at the end of the toasting cycle. Actually, the force stored in the spring is greater when it is stretched the same length over a fewer number of active coils. The force in a spring is given by the following relationship:

$$F = ky$$

where:
F= force
k = spring constant
y = deflection

For a helical extension spring, the spring constant, k, is given by the relationship:

$$k = (d^4G)/(8D^3n)$$

where:
n = number of active coils in spring
D = nominal diameter of spring coil
G = shear modulus of elasticity (of the spring steel)
d = diameter of the spring wire

Because of this latter relationship, as the number of active coils, N, in a given spring decreases, the spring constant, k, increases. Because of the former relationship, as the spring constant, k,

increases for a given deflection distance, y, the force in the spring, F, will increase.

Of course, there is a limit to how much force any spring can store before yielding (permanently stretching). This limit occurs when the shear stress in the spring reaches the yield strength in shear. Nonetheless, this yielding does not reduce the stored elastic force in the spring; it only increases the free length of the spring.

ii. Experimentation confirms the theory that reducing the number of active spring coils will increase the force in the spring. Testing was done with a Model 21100, Series A2989A toaster. This is a Type T16 toaster, which has the same lifter spring as the one in the subject toaster. The spring was stretched to the point of latching ten times, using an Omega Model No. DFG60 digital force gauge to lower the slide. The peak force measured during the stretching process was recorded. The average peak force required to stretch the full spring was 0.88 kg. Next, all but six of its coils were tied together to prevent them from being active. The average peak force required to stretch the spring limited to six active coils was 1.67 kg. Additionally, the six active coils were permanently stretched a distance of approximately 1.44 inch. This is not enough to negatively impact the ability of the toaster to de-energize when it pops up at the end of the toasting cycle. This was demonstrated by testing the toaster with two Pop-Tarts™ on the lightest color setting. Thumbnails of the testing of this Model 21100 toaster are attached as Appendix D.

c. The actual cause of the stretching damage to the lifter spring in the subject toaster is the heat of the fire. Heat from a fire can anneal the steel in the spring and cause it to anneal. The pull of gravity on the lifter slide will then cause the spring to deform (stretch) as it anneals. Such annealing and collapsing of springs is supported by literature on fire investigation, such as NFPA 921. The steel from which the lifter spring is manufactured will anneal, or lose its tension, around 1100°F to

1200°F. The polypropylene housing of the toaster, which is located adjacent to the lifter spring, was consumed in the fire. The burning of this component indicates flames were seated at the location of the spring. Therefore, the local temperature in the region of the spring could have reached approximately 1650°F, which is several hundred degrees above the temperature range needed to anneal the spring. The behavior of the lifter spring also is supported by previous testing conducted by Hamilton Beach to simulate damage to a toaster during a fire, and by my personal observation of previous toasters containing the same or similar springs that were returned after being damaged by heat from a fire.

3. **The toaster was being misused prior to the fire.**

   a. **The toaster was being used to cook a toaster pastry on the darkest toast color setting.**

   b. **The toaster was in use while unattended.**

   c. **Both of the above actions directly contradict the instructions provided in the hazard communications supplied with the toaster in both the Use & Care Guide and the separate Drop-In Warning Sheet.**

These opinions are limited by, and based upon, the evidence examined and information provided regarding the fire scene, the processing of the fire scene, the investigation of the fire scene, and the Plaintiff's experts' reports. Therefore, as more information becomes available that has not previously been disclosed, additional examination of evidence and testing may be required to support these opinions, or my opinions may be modified, or I may have additional opinions.

John J. Datovech, P.E., C.F.E.I.
Manager, Product Assurance & Licensing Quality
Hamilton Beach / Proctor-Silex, Inc.